Meddude Edexcel Discord Server

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2014 Jan C34

3(a)	$4x^3 + 2x^2 + 17x + 8 \equiv (Ax + B)(x^2 + 4) + Cx + D$	
	Compare x^3 terms: $A=4$	B1
	Compare x^2 terms: $B=2$	B1
	Compare either x term or constant term: $4A+C=17$ or $4B+D=8$	
	$\Rightarrow C = ..$ or $D = ..$	M1
	$\Rightarrow C = 1, D = 0$	A1
		(4)

2016 June C34

4 (a)	$$\begin{array}{r} x^2+5 \\ x^2+x-12\overline{)x^4+x^3-7x^2+8x-48} \\ \underline{x^4+x^3-12x^2} \\ 5x^2+8x-48 \\ \underline{5x^2+5x-60} \\ 3x+12 \end{array}$$ M1: Divides $x^4+x^3-7x^2+8x-48$ by x^2+x-12 to get a quadratic quotient and a remainder of the form $\alpha x+\beta$ where α and β are not both zero A1: Correct quotient and remainder	M1A1
	$\dfrac{x^4+x^3-7x^2+8x-48}{x^2+x-12} \equiv x^2+5+\dfrac{3(x+4) \text{ or } 3x+12}{(x+4)(x-3)}$ Writes their answer as $\dfrac{x^4+x^3-7x^2+8x-48}{x^2+x-12} \equiv \text{Their Quotient}+\dfrac{\text{Their Remainder}}{(x+4)(x-3)}$	M1
	$\equiv x^2+5+\dfrac{3}{(x-3)}$ or states $A=5, B=3$	A1
		(4)

2018 Specimen P3

1	$9x^2 - 4 = (3x - 2)(3x + 2)$ at any stage	B1
	Eliminating the common factor of $(3x + 2)$ at any stage $\frac{2\cancel{(3x+2)}}{(3x-2)\cancel{(3x+2)}} = \frac{2}{3x-2}$	M1
	Use of a common denominator $\frac{2(3x+2)(3x+1)}{(9x^2-4)(3x+1)} - \frac{2(9x^2-4)}{(9x^2-4)(3x+1)}$ **or** $\frac{2(3x+1)}{(3x-2)(3x+1)} - \frac{2(3x-2)}{(3x+1)(3x-2)}$	M1
	$\frac{6}{(3x-2)(3x+1)}$ **or** $\frac{6}{9x^2-3x-2}$	A1
		(4)
		(4 marks)

2020 Oct P3

9 (a)	$x^2-x-12\overline{)x^4-x^3-10x^2+3x-9}$ $\quad x^2+2$ $x^4-x^3-12x^2$ $2x^2+3x-9$ $2x^2-2x-24$ $5x+15$	M1A1
	$\dfrac{x^4-x^3-10x^2+3x-9}{x^2+x-12} \equiv x^2+2+\dfrac{5(x+3)}{(x-4)(x+3)}$	M1
	$\equiv x^2+2+\dfrac{5}{(x-4)}$ or stating $P=2, Q=5$	A1
		(4)

2021 Jan P3

3(a)	$2x^2-3x-5=(2x-5)(x+1)$	B1
	$3-\frac{x-2}{x+1}+\frac{5x+26}{2x^2-3x-5}=\frac{3(x+1)(2x-5)-(x-2)(2x-5)+5x+26}{(x+1)(2x-5)}$	M1 A1
	$=\frac{(4x+1)(x+1)}{(x+1)(2x-5)}=\frac{4x+1}{2x-5}$	A1
		(4)

2021 Oct P3

1. (a)	$\frac{5x}{x^2+7x+12}+\frac{5x}{x+4}=\frac{5x+5x(x+3)}{(x+3)(x+4)}$	M1 A1
	$=\frac{5x^2+20x}{(x+3)(x+4)}=\frac{5x(x+4)}{(x+3)(x+4)}=\frac{5x}{x+3}$ *	A1*
		(3)

2022 Oct P3

1(a)	$2x^3-4x-15=(Ax+B)(x^2+3x+4)+C(2x+3)\Rightarrow A=\ldots$ or $x^2+3x+4\overline{)2x^3+0x-4x-15}$ $\quad 2x\ldots$ $\quad\quad 2x^3+\ldots$	**M1**
	$A=2$	**A1**
	$B=-6, C=3$	**A1A1**
		(4)

2023 Jan P3

4(a)	Any correct constant, so for $A=2$ or $B=3$ or $C=-1$ or $D=5$	B1
	$2x^4+15x^3+35x^2+21x-4=Ax^2(x+3)^2+Bx(x+3)^2+C(x+3)^2+D$ $\Rightarrow A=...,B=...,C=...,D=...$ or $2x^4+15x^3+35x^2+21x-4\div(x^2+6x+9)=...x^2+...x+...+\frac{...}{(x+3)^2}$	M1
	2 correct of $A=2,B=3,C=-1,D=5$	A1
	$A=2,B=3,C=-1,D=5$	A1

2024 Jan P3

4(a)	$f(x)=\dfrac{2x^2-32}{(3x-5)(x+4)}+\dfrac{8}{3x-5}$	B1
	$=\dfrac{2x^2-32}{(3x-5)(x+4)}+\dfrac{8}{3x-5}=\dfrac{2x^2-32+8(x+4)}{(3x-5)(x+4)}$ or e.g. $=\dfrac{2(x-4)(x+4)}{(3x-5)(x+4)}+\dfrac{8}{3x-5}=\dfrac{2(x-4)+8}{(3x-5)}$	M1
	$=\dfrac{2x\cancel{(x+4)}}{(3x-5)\cancel{(x+4)}}=\dfrac{2x}{3x-5}$ *	A1*
		(3)